

## WHAT IS CLAIMED IS:

1. A process for controlling a fuel cell comprising a fuel cell, which generates power by supplying anode gas and cathode gas into the fuel cell, a compressor which controls the amount of the gas to be supplied into the fuel cell, and a pressure control valve which controls the gas pressure of the fuel cell and which is provided on the downstream of the fuel cell,

10 said process comprising:

changing an amount of the supply gas by said compressor during the transition period of said fuel cell, and thereafter changing the opening of said pressure control valve.

15 2. A process for controlling a fuel cell comprising: a flow amount feedback control step which controls the flow amount of the gas supplied into a fuel cell to be a prescribed value; and

20 a pressure feedback control step which controls the pressure of the fuel cell to be a prescribed value,

said feedback steps being stopped during the transition period of the fuel cell.

25 3. A fuel cell system comprising:

a fuel cell, which generates power by supplying anode gas and cathode gas into the fuel cell,

a compressor which controls the amount of the gas to be supplied into the fuel cell,

30 a pressure control valve which controls the gas pressure of the fuel cell and which is provided on the downstream of the fuel cell,

airflow control means, which controls the airflow toward the cathode inlet side to be a target airflow amount

35 corresponding to a target power generation amount of the fuel cell by controlling the revolution number of said compressor, and

air pressure control means, which controls the air pressure at the cathode inlet to be a target air pressure

40 corresponding to the target airflow amount by controlling the opening of said pressure control valve at the stationary state, and which controls the pressure control valve corresponding to the change in the airflow amount detected from said flow sensor to thereby control the air

45 pressure to be the target air pressure during the transition period.

4. The fuel cell system as claimed in Claim 3,

wherein said air pressure control means during the transition period controls the opening of said pressure control valve depending upon the airflow amount detected from the flow sensor and upon the target air pressure.

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5. The fuel cell system as claimed in Claim 3, wherein said air pressure control means during the transition period is kept operating until said airflow amount reaches the target airflow amount.

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6. The fuel cell system as claimed in Claim 4, wherein said air pressure control means during the transition period is kept operating until said airflow amount reaches the target airflow amount..

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7. A process for controlling a fuel cell comprising controlling the power generation amount of the fuel cell by controlling the flow amount and the pressure of the air compressively transferred into the cathode inlet side of the fuel cell, and

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controlling said air pressure to be a target airflow amount corresponding the detected airflow amount, which is gradually changed, during the transition period of said fuel cell.

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